MODULE VIII
~~DEMILITARIZATION~~
MISCELLANEOUS TREATMENT UNITS

VIII.A. **APPLICABILITY**

VIII.A.1. The requirements of this module pertain to the miscellaneous units described in Attachment 14 (~~Demilitarization~~ Miscellaneous Treatment Units) and listed below in Conditions VIII.A.1.a through VIII.A.1.f.

VIII.A.1.a. Two Drum Ventilation System (DVS) Enclosures located in DCD Area 10 Igloo 1632 ~~Reserved.~~

VIII.A.1.b. Two Projectile/Mortar Disassembly Machines (PMDs) located in the ECRs.

VIII.A.1.c. Three Multipurpose Demilitarization Machines (MDMs) and the associated Pick and Place Machines (PKPLs) located in the Munitions Processing Bay (MPB).

VIII.A.1.d. Two Bulk Drain Stations (BDSs) located in the MPB.

VIII.A.1.e. One Drum Ventilation System Sorting Room (DVSSR) located in DCD Area 10 Igloo 1632~~Reserved~~.

VIII.A.1.e.1 Prior to opening containers in this Igloo, standard operating procedures must be submitted to the Executive Secretary for approval.

VIII.A.1.f. One Air Operated Remote Ordnance Access System (Cutter Machine), which can be located in either ECR, or in the MPB.

VIII.A.1.f One Autoclave for the treatment of Secondary Waste located in DCD Area 10 Igloo 1631.

VIII.A.1.f.1 Prior to hazardous waste operations in this Igloo, standard operating procedures must be submitted to the Executive Secretary for approval.

VIII.A.2 The Permittee may feed uncut bursters from M104, M110, mustard 155mm projectiles and 4.2" HT mortars to the DFS.

VIII.B. **ALLOWABLE WASTE FEED**

VIII.B.1. Reserved

VIII.B.2. The Permittee may treat 155-mm projectiles, and 4.2 inch mortars (hazardous waste codes P999, D002, D003, D004, D006 through D010, D028, D034, and D039) in the PMDs and the MDMs/PKPLs to comply with rates specified in Modules V and VI for the DFS and MPF.

VIII.B.3. The Permittee may treat ton containers, (hazardous waste codes P999, D002, D003, D004, and D006 through D010, D028, D034, and D039) in the BDSs to comply with rates specified in Modules V and VI for the MPF.

VIII.B.4. The Permittee is prohibited from treating waste in the miscellaneous units, identified in Condition VIII.A.1 that is not identified in Conditions VIII.B.2, ~~and~~ VIII.B.3., VIII.B.6 and VIII.B.7.

VIII.B.5 Wastes treated in the DVS Enclosures and the DVSSR shall be limited to TOCDF-generated secondary wastes with the following waste codes: P999, F999, D002, D003, D004, D005, D006, D007, D008, D009, D010, D011 and F001-F005 for TOCDF-originated laboratory sample waste.

VIII.B.6 Waste treated in the Autoclave shall be limited to secondary waste with the following waste codes: P999, F999, D002, D003, D004, D005, D006, D007, D008, D010 and D011 after approval.

VIII.C. **IGNITABLE AND INCOMPATIBLE WASTES**

VIII.C.1. Ignitable wastes (D001) shall not be treated in the ECRs or MPB.

VIII.C.2. The Permittee shall place only munitions or bulk containers with one type of chemical agent (e.g., GB, VX or Mustard) in the MPB at one time. Only one chemical agent may be placed in the ECRs.

VIII.C.3. The Permittee shall not place chemical agent or munitions containing that chemical agent in a container that previously held a different chemical agent or munitions containing a different chemical agent until the container has been decontaminated to less than 1 VSL.

VIII.D. **DESIGN AND OPERATING REQUIREMENTS**

VIII.D.1. The Permittee shall comply with the design and operating requirements specified in Attachment 14 (~~Demilitarization~~ Miscellaneous Treatment Units) of the Permit.

VIII.D.2. The Permittee shall comply with the requirements specified in the Attachment 9 (Contingency Plan) when there has been a release that escapes engineering controls or a fire, explosion, or detonation from the operation of the PMDs, MDMs, or BDSs.

VIII.D.3. If equipment in the ECRs or down line of the ECRs shuts down, any munitions or munition components being processed in the ECRs may remain in the ECRs until the equipment in question is operational. Alternatively, facility personnel may don appropriate PPE and physically retrieve the munitions or munition components from the ECRs and manually place the item(s) into an appropriate overpack for subsequent storage in the Toxic Maintenance Area (TMA). These activities shall be documented for each day of occurrence in the Operating Record.

VIII.D.4. If the equipment in the MPB or down line of the MPB shuts down, any bulk containers, munitions, or associated components being processed in the MPB may remain in the MPB until the equipment in question is operational. Alternatively, facility personnel may

don appropriate PPE and physically retrieve munitions or munition components from the MPB and manually place the item(s) into an appropriate overpack for subsequent storage in the TMA. These activities shall be documented for each day of occurrence in the Operating Record.

VIII.D.5. The Permittee shall maintain sensors and interlocks identified as critical in the tables of Attachment 14 (~~Demilitarization~~ Miscellaneous Treatment Units) so that they are functional when the associated miscellaneous unit is operating. The Permittee is allowed to complete processing of any partially processed munition when a sensor or interlock identified as critical ceases to function.

VIII.D.6. Munition rejects exiting any of the miscellaneous units identified in Condition VIII.A shall be transferred to the ECV, UPMC, MPB, or the TMA for pre-treatment under an Emergency Permit, returned to storage, or placed back into the miscellaneous unit to complete treatment with the exception of 155mm mustard projectiles rejected by the PMDs solely because of stuck bursters or 4.2 inch HT mortars rejected by the PMD for failure to remove the fuze. The mustard 155mm projectiles that have been rejected by the PMDs solely because of stuck bursters or 4.2 inch HT mortars rejected by the PMD for failure to remove the fuze. may be rejected back to the ECV for storage until the PMD has been retooled to enable mechanical dislodging of the buster or commencement of the associated leaker/reject campaign. The mustard 155mm projectiles permitted storage capacity of the ECV shall not be exceeded. These activities shall be documented for each day of occurrence in the Operating Record.

VIII.D.7. Igloo 1631 Autoclave Operating Requirements

VIII.D.7.1. The Permittee shall conduct an Autoclave Demonstration Test in accordance with a test plan approved by the Executive Secretary for the purposes of establishing the minimum temperature and temperature exposure time needed to destroy and remove the agent contamination associated with the Secondary Wastes being treated.

VIII.D.7.2. The Permittee may process up to 880* gallons of Secondary Waste per treatment cycle based on the collective volume of the drums either directly charged to the Autoclave or the drums emptied into the Autoclave Waste Bins.

VIII.D.7.3. Secondary wastes may be treated in the Autoclave in the High Density Polyethylene (HDPE) containers or in the metal drum used to store the waste provided the Permittee demonstrates the effectiveness of treating secondary wastes in the storage containers during either the demonstration test or a function test as required by Conditions VIII.D.7.5.a and VIII. D.7.5.b

VIII.D.7.4. Secondary wastes shall be processed in the Autoclave per the requirements specified in the Table VIII.A below.

Table VIII.A Secondary Waste Autoclave Processing Requirements

Autoclave Process Step	Tag ID	Requirement	Step Duration (minutes)

Autoclave Treatment Heat-Soak	A10-TIT-241 A10-TIT-242 A10-TIT-243 A10-TIT-244	Minimum Temp. > 275* ºF	180* minutes
Post-Treatment Evacuation	A10-PIT-203	Minimum Autoclave Vacuum < TBD psig	Maintained for minimum TBD minutes
Minimum Post-Treatment Cooling & Drying			Minimum TBD minutes
Minimum Post Treatment Equilibration time before Autoclave Headspace Monitoring	A10-PIT-203 A10-TIT-201	Minimum Autoclave Pressure ≤ Atmospheric Minimum Autoclave Temp. < TBD ºF	Maintained for TBD minutes before Autoclave Headspace Monitoring
Autoclave Headspace Monitoring	TEN-083V TEN-083G TEN-083H	Minimum One Complete ACAMS Cycles	VX = 6 minutes/cycle GB = 3 minutes/cycle HD= 5 minutes/cycle

TBD = To be determined from Autoclave Demonstration Test

VIII.D.7.5. Based on approval by the Executive Secretary of the results of testing conducted in compliance with Conditions VIII.D.7.5.a and VIII.D.7.5.b, the Permittee may treat in the Autoclave secondary wastes as described in Table VIII.B.

Table VIII.B Secondary Wastes Permitted for Autoclave Treatment

Maximum Combined Drum Volume per Treatment Batch = 880 gallons	
Waste Stream	**Maximum Packing Density (lbs/ft^3)**
TOCDF Generated:	
Contaminated DPE Suits in Poly-Drums	TBD
Contaminated LSS Air Hoses in Poly-Drums	TBD
Contaminated wood (dunnage associated with pallets) in Poly-Drums	TBD

TBD = To be Determined from Autoclave Demonstration Test

VIII.D.7.5.a. The Permittee may perform function tests to demonstrate the effectiveness of Autoclave treatment to allow the treatment of wastes not listed in Table VIII.B. The function test(s) shall determine and establish:

- The maximum individual drum weight (i.e., packing density [drum weight/drum volume]) or waste bin weight applicable to the waste stream being tested,
- The acceptability of the storage container's material of construction for treating waste if the Permittee desires to treat the waste in storage containers,

- The optimum placement of the control thermocouples within the waste bin or waste storage container to determine when a representative section of the waste's mass has reached the treatment temperature, and

- The penetration of steam or moisture into a representative section of the waste(s) mass by either visual inspection of the treated waste(s) or post-treatment inspection of moisture indicators placed into representative sections of the waste(s) for the purpose of testing.

VIII.D.7.5.b. The Permittee shall provide function plan for each new waste stream and a notice to the Executive Secretary a minimum of fourteen days in advance of conducting a function test. Following each function test, and prior to continued processing of the waste(s) tested, Executive Secretary shall provide written approval that such waste(s) may be processed in the Autoclave by the inclusion of the waste stream(s) description in Table VIII.B.

VIII.D.7.5.c The Permittee shall operate continuously the Carbon Adsorption Filtration system once hazardous waste operations begin through closure.

VIII.D.8. Igloo 1632 Operating Requirements:

VIII.D.8.1 The Permittee shall operate continuously the Carbon Adsorption Filtration system once hazardous waste operations begin through closure.

VIII.E. DETECTION, INSPECTION, AND MONITORING REQUIREMENTS

VIII.E.1. As described in Attachment 14 (~~Demilitarization~~ Miscellaneous Treatment Units), the Permittee shall monitor the waste throughput for each miscellaneous unit by use of the Process Data Acquisition and Recording System (PDARS) and the manual records maintained by the control room operators or the Area 10 Igloo (DVS/DVSSR and Autoclave) Operators. The Permittee shall use weighing, before and after draining, to quantify the amount of agent removed in the BDSs.

VIII.E.2. The Permittee shall use the bubbler system and load cells associated with the BDS to determine the quantity of liquid agent drained from a bulk container processed in the BDS. The amount of residual liquid and solid heel remaining in the bulk container shall then be determined by comparing the ton container's initial fill weight with the amount of liquid drained. If the Permittee is unable to determine the quantity of liquid and solid residual heel in the bulk container or the Drain Tube System (DTS) encounters a solid heel before reaching the programmed drain level, the Permittee shall orally notify the Executive Secretary within 24 hours. The Permittee shall record the bubbler reading and load cell reading for each bulk item drained in the Operating Record. If the quantity of agent removed, as determined in Condition VIII.E.1, is not consistent with the bubbler system or the DTS programmed drain level, then the Permittee shall not feed the bulk container to the MPF until a resolution is agreed to orally by the Executive Secretary.

VIII.E.2.a As an alterative to using weights, before and after draining, to quantify the amount of agent removed in the BDS for Baseline Ton Container Processing, the Permittee may confirm the heel weight of drained bulk containers using the DTS and its associated programmed drain levels after the Executive Secretary has approved the correlation between heel depths and heel weights developed during the Mustard Baseline Shakedown Period as allowed by Condition VI.C.1.a.v.

VIII.E.3. The Permittee shall record the results of drain condition in the Operating Record.

VIII.E.4. If the evaluation conducted in accordance with Condition VIII.E.3 indicates that the drain is insufficient to enable feed of the bulk container to the MPF, then the Permittee shall notify the Executive Secretary as to which one of the following courses of action shall be implemented:

VIII.E.4.a. The Permittee shall perform corrective maintenance on the BDS. The bulk container will then be drained again. The drain status will be re-evaluated according to Condition VIII.E.3 or;

VIII.E.4.b. For Mustard ton containers only, the bulk container shall be processed in accordance with the procedures demonstrated in the approved Mustard trial burn. The maximum feed weight is in Module V; or

VIII.E.4.c. The Permittee shall comply with the requirements in Condition VIII.E.11.

VIII.E.5. If the evaluation conducted in accordance with Condition VIII.E.3 indicates that the drain is sufficient, then the bulk container may be considered adequately drained and fed to the MPF. This determination shall be documented in the Operating Record.

VIII.E.6. If the fill weight for a given ton container, as listed in the Deseret Chemical Depot (DCD) inventory, is less than the standard fill weights (1800 lbs Mustard), then the Permittee may opt to apply the following criteria when evaluating consistency between the quantity removed and the bubbler reading.

VIII.E.6.a. If the quantity of agent removed from a ton container by the DTS is less than the minimum required to enable feed to the MPF, indicating that the residual liquid and solid heel is greater than the maximum allowed the Permittee shall 1) remove additional heel material at the HTS until the net weight is below the maximum allowed, or 2) comply with Condition VIII.E.3 and Condition VIII.E.4 or VIII.E.5.

VIII.E.6.b. If the quantity of agent removed from the ton container is greater than or equal to the minimum required to enable feed to the MPF indicating that the residual liquid and solid heel is less than the maximum allowed then the ton container may be considered adequately drained and fed to the MPF.

VIII.E.7. The Permittee shall use the bubbler system and the AQS associated with the MDM to determine if projectiles or mortars processed in the MDM are drained. If the Permittee is unable to determine if the projectile or mortar is drained using the bubbler system and the AQS, the Permittee shall orally notify the Executive Secretary within 24 hours. An AQS adequate drain determination consists of an indication of flow into the AQS. The

Permittee shall record the bubbler readings and the AQS reading for each projectile or mortar drained in the Operating Record. If the quantity of agent removed is not consistent with a complete drain for the munitions on that tray, then the Permittee shall not feed the tray of projectiles or mortars to the MPF and shall follow the requirements specified below:

VIII.E.7.a. The Permittee shall conduct a visual inspection and physical measurement to ascertain the drain status. The Permittee shall record the results of this evaluation in the Operating Record.

VIII.E.8. If the visual inspection and physical measurement evaluation conducted in accordance with Condition VIII.E.7.a indicates that the drain is insufficient, then the Permittee shall orally notify the Executive Secretary as to which one of the following courses of action shall be implemented:

VIII.E.8.a. The Permittee shall perform corrective maintenance on the MDM. The munition will then be drained again. The drain status will be re-evaluated according to Condition VIII.E.7.a or;

VIII.E.8.b. The Permittee shall comply with Condition VIII.E.11.

VIII.E.9. If the visual inspection and physical measurement evaluation conducted in accordance with Condition VIII.E.7.a indicates that the drain is sufficient, then the munition may be considered adequately drained and fed to the MPF.

VIII.E.10. The method used to determine if a bulk container, projectile, or mortar is adequately drained shall be recorded in the Operating Record for each of these items processed except for the mustard 155mm projectiles which will not be drained.

VIII.E.11. Within 24 hours of discovery of any bulk container, projectile, or mortar which cannot be processed under Conditions VIII.E.2 through 6 and VIII.E.7 through 10, the Permittee shall notify the Executive Secretary and (1) properly manage the munition or bulk container in the Munitions Demilitarization Building; (2) request and receive approval for further processing; or both. A sample of the undrained liquid, or solid, or both shall be taken and analyzed for agent purity and metals content, unless a treatment method for the bulk container or munition type has been approved by the Executive Secretary in accordance with the procedures in R315-3-4.

VIII.E.12. The Permittee shall follow the inspection requirements for the equipment/processing lines associated with the miscellaneous units as specified in Attachment 5 (Inspection Plan).

VIII.E.13. The Permittee shall initiate repair of all chips and cracks in the epoxy coatings on the floors of the ECRs and MPB within 72 hours of detection.

VIII.E.14. The Permittee shall not conduct any DPE or related entries into areas which are contaminated with agent above the 140 IDLH Mustard and 500 IDLH GB and VX.

VIII.E.15. The Permittee may use the Air Operated Remote Ordnance Access System (Cutter Machine) to cut into cylindrical items that have been rejected or require special handling. It may be used for nose closure removal, fuze removal, and access to interior

components. The Cutter Machine will be used in accordance with site approved operating procedures.

VIII.E.16 DVS Inspection and Monitoring Requirements

VIII.E.16.a The Permittee may use the DVS Enclosures and DVSSR to gain access to the internal volume of secondary waste drums for the purpose of sorting, characterizing and determining the agent-contamination status (e.g., monitoring) of the drum's contents.

VIII.E.16.a.i The application of decontamination solution in order to enable shipment of the waste is permitted only if such treatment is described in the WAP (CAL Aqueous Wastes, CAL Solid Wastes and MSB Solid Waste) to ensure agent concentration of the residual spent decontamination solution is below 20ppb GB/VX or 200 ppb Mustard).

VIII.E.16.a.ii The drum and its contents may be treated by the application of decontaminant or other cleaning compound with the goal of reducing risk to personnel or reducing the level of PPE for further handling. The P999 waste code shall thus be retained by the waste throughout the DVS treatment process.

VIII.E.16.b The Permittee may use the DVS Enclosures and DVSSR, only as specified herein, to characterize the "as-received" agent-contamination status of secondary waste drums by headspace monitoring.

VIII.E.16.b.1 To add new waste streams to the list of approved waste streams specified in VIII.E.16.d, a headspace monitoring demonstration test shall be performed for each waste stream. A plan must be approved by the Executive Secretary and a minimum of fourteen days advance notice of the demonstration test performance. The Executive Secretary shall provide written approval of the demonstrated headspace monitoring procedure for that waste stream. If headspace monitoring is not demonstrated the~~n all~~ waste must be processed in the Autoclave or MPF after waste stream has been demonstrated per Module VIII. Once an approved headspace monitoring procedure is approved for ~~each~~a specific waste stream by the Executive Secretary, then the drum's contents may be classified into one of the following agent-contamination categories; destined for treatment or disposal indicated:

1) Headspace < 0.2 VSL, ship and dispose offsite at a Subtitle C TSDF as F999 Waste (i.e., P999 Not-Applicable)
2) Headspace ≥ 0.2 VSL and <1.0 VSL, ship and dispose offsite at a Subtitle C TSDF as F999/P999 with additional offsite controls (special handling through contract requirement) as an added measure of control to reduce potential contact with waste.
3) Headspace ≥ 1.0 VSL, treat in a hazardous waste management unit (Autoclave) or TOCDF MPF permitted for treatment for that P999 waste stream.

VIII.E.16.d A Secondary Waste Drum Headspace Monitoring method is currently approved by the Executive Secretary for the following waste streams:

Secondary Waste Drums Having a DSHW-Approved Headspace Agent Monitoring Method for Determination of Drum's Agent Contamination Status

1) DPE Suits

VIII.E.16.e Unapproved P999-characterized secondary waste types not listed in VIII.E.16.d shall be treated in a hazardous waste treatment unit (HWMU) permitted for P999 treatment. In lieu of performing headspace monitoring, the Permittee may conservatively treat approved waste types in a permitted HWMU as P999 waste.

VIII.E.17 Autoclave Inspection and Monitoring Requirements

VIII.E.17.a The Permittee shall monitor and record the temperature and time of temperature soak associated with each batch of Secondary Waste treated in the Autoclave.

VIII.E.17.b The Permittee shall perform post-treatment agent monitoring on the Autoclave headspace to determine the applicable waste management practices for the treated wastes.

VIII.E.17.b.i Treated secondary wastes with post-treatment headspace agent monitoring results of less than 0.5 Vapor Screening Limit (VSL) and a demonstrated WCL of less than 20ppb for VX/ GB and 200ppb for mustard may be managed in roll-offs for off-site transport to a Subtitle C TSDF as F999.~~.~~

VIII.E.17.b.ii Treated secondary wastes with post-treatment headspace agent monitoring results of less than 0.5 Vapor Screening Limit (VSL), but without a demonstrated WCL of less than 20ppb for VX/ GB and 200ppb for mustard, may be managed in roll-offs for off-site transport to a Subtitle C TSDF as P999/F999 with additional offsite controls (special handling through contract requirement) as an added measure of control to reduce potential contact with waste..

VIII.E.17.b.i~~i~~i Autoclave treated secondary wastes with post-treatment headspace agent monitoring results equal to or greater than 0.5 VSL shall be retreated in the Autoclave.

VIII.E.17.b.iv~~ii~~ The Permittee shall notify the Executive Secretary of each instance when a batch of Autoclave treated wastes receives an additional Autoclave treatment. The Executive Secretary may require additional testing or an adjustment to Autoclave operating parameters and drum weight limits for secondary waste streams requiring repeated multiple treatments.

VIII.F. STORAGE REQUIREMENTS

VIII.F.1. The Permittee may store waste in the form of maintenance residues on the equipment in the ECRs or on the floor of the ECRs provided that Conditions VIII.F.2 and VIII.F.3 are satisfied.

VIII.F.2. Waste in the ECR sumps shall be removed within 24 hours as required by Module IV.

VIII.F.3. The explosive limits of each ECR, as specified in Attachment 14 (Demilitarization Miscellaneous Treatment Units), shall not be exceeded.

VIII.G. CLOSURE

VIII.G.1. At closure, the Permittee shall follow the procedures specified in Attachment 10 (Closure Plan).